DOCKET SECTION

ADVO-RT-1

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D. C. 20268-0001

POSTAL RATE AND FEE CHANGES, 1997	:	Docket No. R97-1

REBUTTAL TESTIMONY

OF

ANTOINETTE CROWDER

ON BEHALF OF

ADVO, INC.

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TABLE OF CONTENTS

TABLE OF CONTENTS
(continued)

INTRODUCTION, SUMMARY, AND CONCLUSIONS

A. Introduction and Summary

My name is Antoinette Crowder and I am a senior consultant with TRANSCOMM, Inc., in Falls Church, Virginia. I have testified before the Postal Rate Commission in this and prior proceedings and my autobiographical sketch is included as an attachment to this testimony. The purpose of my testimony is to address issues raised in the direct testimony of ABA/NAA witness Clifton (ABA/NAA-T-1), AAPS witness Bradstreet (AAPS-T-1), NAA witnesses Donlan (NAA-T-2) and Chown (NAA-T-1), and USPS witness Baron (Statement in Reponse to Notice of Inquiry No. 3).

Following is a summary of my conclusions with respect to the testimony of these witnesses. More detailed analyses are presented separately in the sections which follow.

B. Conclusions

1. Rebuttal to ABA/NAA Witness Clifton

ABA/NAA witness Clifton criticizes the Standard A rate structure and USPS witness McGrane's weight cost study, claiming that: (1) the Standard A rate structure below the breakpoint is not cost based, (2) witness McGrane's weight cost study is flawed, and (3) Standard A rates are being "subsidized" by First Class rates. His criticisms are superficial and wrong. For ECR mail, the weight cost study is reliable and shows a cost pattern that is clearly discernible, consistent with the underlying characteristics of the mail and postal operations, and corroborated by prior studies over the last 15 years that have consistently shown the same pattern of cost

behavior. It demonstrates that the USPS-proposed piece-related rates and discounts up to the 3.3 ounce breakpoint for ECR are appropriate. It also demonstrates, contrary to AAPS witness Bradstreet's claim, that weight has little effect on costs beyond the breakpoint and that the USPS proposed pound rate, although still too high, is an improvement and a step in the right direction.

Witness Clifton's allegation that Standard A ECR is subsidized by First Class Presort has no legitimate basis, economic or otherwise. His definition of subsidy is strained and convoluted, especially when one of the "subsidized" subclasses (ECR) makes a contribution to institutional cost which is over double either its marginal or short-term incremental costs. His recommendations should be rejected.

2. Rebuttal to AAPS Witness Bradstreet

AAPS witness Bradstreet recognizes that in-office delivery costs are piece-related, but he claims that out-of-office costs are weight-related. His attempts to demonstrate his point are riddled with simplistic and unrealistic assumptions that do not reflect the real world delivery environment. In particular, he ignores the substantial excess delivery weight capacity available in the system and the significant flexibility that supervisors and carriers have to deal with unexpected volumes. Moreover, the deferrability of Standard A mail generates out-of-office cost savings because it can be used to levelize carrier workloads. Therefore, despite his claims to the contrary, overall delivery costs are not sensitive to weight. Finally, even if one were to assume some ECR city carrier costs were weight-related, the impact on the ECR per pound cost would be minimal.

3. Rebuttal to NAA Witness Donlan

NAA witness Donlan criticizes the USPS proposed Regular ECR high-density and saturation discounts and recommends that the Commission retain the current (MC 95-1) discount levels. In the USPS proposal, these discounts are based on the combined delivery and mail processing unit cost differences among the density-related categories. This is a major improvement over the prior method which ignored the substantial mail processing cost differences due to the high-density and saturation nature of this mail. Donlan argues that the data used by the USPS "do not represent current operating conditions," that its analytical approach "accounts for DPS-related mail processing costs but ignores offsetting delivery costs savings," and that the data are not reliable (page 12). His conclusions are superficial and do not support his proposal to retain the MC95-1 density-related rate differentials. Indeed, even when the USPS-estimated ECR unit costs are adjusted to reflect his data, they still support the USPS-proposed discounts. For ECR non-letters, the adjusted cost differentials are substantially greater than the proposed rate differentials, reflecting very conservative cost passthroughs. For ECR letters, the adjusted cost differentials are only slightly below the proposed rate differentials, consistent with the valid USPS policy of encouraging diversion of ECR Basic-rated letters to Automation rate categories.

4. Rebuttal to NAA Witness Chown

NAA witness Chown's latest version of her functionalized institutional costs, so-called "weighted attributable costs," suffers the same defects as her earlier R90-1 pricing scheme. Her approach, which tries to reapportion costs for pricing purposes ostensibly to set prices that reflect the "benefit" each class receives from institutional costs, is really an attempt to achieve higher rates for low-cost, price-sensitive, high-contribution ECR mail which competes with newspapers. Rather than simplifying or allowing better informed pricing decisions, her approach would complicate and obfuscate the pricing process, introduce greater instability and less consistency in application of the statutory pricing factors, and lead in the wrong direction toward rates that are based on mechanistic cost allocations rather than sound economic and market considerations. Witness Chown's approach makes no economic or ratemaking sense and should again be rejected.

5. Rebuttal to Witness Baron

At the hearing on Commission Notice of Inquiry No. 3, USPS witness Baron claimed that the mathematical model of city delivery load time presented in my testimony (JP-NOI-1), and followed in the "Propositions" presented in the Presiding Officer's Notice of Areas of Likely Inquiry at the Hearing, was "invalid" because the load time at a stop that "gets the average volumes" does not equal the "average of the load times calculated over all the stops." (TR16167) My testimony here demonstrates that witness Baron's oblique criticism is misplaced. The crux of my earlier testimony -- that the mismatch between the LTV modeled load time and elasticities and the STS

estimate of accrued load time necessarily results in a substantial overstatement of attributable load time costs – remains equally valid regardless of the nuance raised by witness Baron. I demonstrate mathematically that even if the load time model were disaggregated by stop as witness Baron seems to suggest, rather than measured at the system mean volume level, the problem I identify still exists and needs to be corrected. This can be done either by (1) treating the modeled LTV load time as the correct measure of load time or (2) substantially adjusting downward the elasticities from the LTV model that are applied to the STS estimate of load time. Under the first approach, a separate fixed stop time correction is necessary, as I have proposed. Under either approach, if load time variability were estimated at a more disaggregated level, as suggested by witness Baron, elemental load time would be reduced even more.

Separately, I show that witness Baron's apparent concern that there was little saturation flats volume reflected in the LTV data is likewise misplaced. There was proportionately more carrier route and saturation mail volume in the system at the time of the LTV test than in the 1996 base year, and there is no reason to believe that the LTV models do not reflect the presence of saturation mail.

I. REBUTTAL TO ABA/NAA WITNESS CLIFTON

Witness Clifton's testimony on behalf of ABA and NAA (ABA/NAA-T-1) is a strained cobbling-together of unrelated issues leading to wholly unsupported conclusions. ABA's interest is in reducing the rates for 1-3 ounce First Class Presort mail that its members use. NAA's clear interest, by contrast, is in increasing the rates for Standard A mail with which its members compete. Witness Clifton tries to merge these different objectives by crafting a linkage between these issues. He contends that rates for 1-3 ounce Standard A mail do not cover their "incremental" costs and, from there, leaps to the conclusion that Standard A mail is being "cross-subsidized" by First Class Presort mail. His remedy is to finance his proposed reductions in First Class Presort extra-ounce rates (ABA's objective) by raising rates for Standard A mail (NAA's objective).

My testimony shows that (1) Clifton's criticisms of USPS witness McGrane's Standard A weight cost study are superficial and unjustified, (2) his claim that the Standard A rate structure below the 3.3-ounce breakpoint is not cost based is wrong, and (3) his contention that the Standard A rate structure somehow results in a cross-subsidy between Standard A mail and First Class mail is frivolous.

My testimony also shows that AAPS witness Bradstreet's opposition to the USPS proposed pound rate for ECR mail is unfounded because the proposed pound rate very substantially exceeds ECR pound-related costs.

A. ECR Cost and Rate Structure

1. ECR 1996 Weight Cost Study

Witness Clifton criticizes two aspects of the USPS weight cost study which he finds "anomalous" or "peculiar:" (a) the first-ounce cost is higher than that for second and third ounces, and (b) unit costs for several ounces beyond the 3.3-ounce breakpoint are lower than the first-ounce cost. These facts are neither anomalous nor peculiar but reflect the actual makeup and cost characteristics of the mail.

To demonstrate this, I have refined USPS witness McGrane's weight cost study to show unit costs by ounce increment for letters and flats, separately, for (1) ECR mail unadjusted for worksharing differences, (2) ECR basic presort mail which is not drop shipped, termed here as "non-workshared" mail; and (3) ECR saturation mail which is drop shipped to the destination delivery office, termed as "100% workshared" mail. These are derived by applying the discount-related cost differences identified by the USPS to the corresponding volumes and costs provided by witness McGrane in LR H-182. In addition, several other adjustments to the LR H-182 data and method were made:

- Costs which were based on cost data by shape from LR H-108 have been adjusted to reflect the latest revisions to LR H-108.
- Volumes, weight, and cubic feet have been adjusted to match LR H-108 (*i.e.*, the RPW figures).
- Letter volumes and costs below the breakpoint were identified and are called "letters" in this testimony.

- Above the breakpoint, all volumes and costs identified as "letters" in LR H-182 are instead included in the volumes and costs of "flats," since letter-shaped mail over the breakpoint is treated for rate purposes as non-letters.

The resulting costs by weight increment are shown at the end of this section in Figure 1 for flats, and in Figure 2 for letters. For both letters and flats, costs in the first ounce increment are higher than for subsequent increments up to three ounces (*i.e.*, near the piece/pound breakpoint). For non-workshared flats beyond the breakpoint, the pattern of unit costs gradually increases with moderate fluctuations, except for a sharp upward spike at the final 15-16-ounce increment. For 100%-workshared flats beyond the breakpoint, the pattern of unit costs is relatively flat throughout most of the range, with a similar spike in the last weight increment. These results fully support the USPS-proposed ECR rate structure with (a) a uniform minimum-per-piece rate through at least the 3.3-ounce breakpoint, and (b) a substantially lower pound rate above the breakpoint.

Contrary to Witness Clifton's claim, the higher unit costs in the first ounce increment for both ECR letters and flats and the declining costs over several ounces beyond the breakpoint are not "anomalous." In fact, those results reflect the real makeup and cost characteristics of the mail. At least two factors contribute to this cost pattern. First, a portion of letters and flats under one ounce, because of their light weight, tend to be flimsy and more difficult to handle in piece-related processing and casing functions. Second, non-workshared basic letters and flats have a low address density which, coupled with light piece weight, tends to result in less efficient

containerization and packaging than heavier weight pieces. This can cause less efficient handling and extra bundle/piece handling prior to being sent to the delivery carrier. These preparation-related efficiencies counterbalance weight-related transportation costs over the first several ounce increments. As discussed below, this higher cost for pieces under one ounce is hardly new and has shown up consistently in every weight cost study presented over the last 15 years.

With respect to Standard A "weight-related" costs, witness Clifton's only two points are that "more trays" are needed for 2-ounce than for 1-ounce letter mail and that letter automation throughputs decline with increasing weight.[1] His "more trays" argument ignores the efficiencies mentioned above:

- A 1-ounce ECR basic mailing with 20 pieces per carrier route would fill only a tiny portion of a carrier-route tray and would have to be prepared as bundles in a 5-digit or even 3-digit tray, requiring extra bundle sorts for distribution to carriers. A 2- or 3-ounce basic mailing would, as mailing density increased, permit preparation as full 5-digit or carrier route trays that bypass sorting steps and, perhaps, do not have to be unbundled.

- For ECR basic flats, as piece weight increases, there are improved containerization efficiencies that likewise bypass extra handling prior to reaching the carrier.

His "automation throughput" argument is also simplistic. While some ECR letters may undergo DPS processing, unlike First Class Presort, they require no other sortation. And, none of the 58% of the subclass represented by non-letters requires automation. In any event, any such automation costs caused by ECR are already included in the ECR unit costs shown in Figures 1 and 2. Thus, witness Clifton has presented no

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[1] His only analysis of the effect of weight on Standard A costs is his "brief evaluation" in Appendix A, pages A.11-12.

sound reason for disregarding the clear pattern of ECR unit costs over the 0-3 ounce range.

He also questions the ECR weight cost study results in the higher weight ranges, claiming that "the results for higher weights are even more peculiar." (Appendix A, page A.11) His concerns are misplaced. The pattern of cost for ECR mail, even above the breakpoint where the volumes eventually become thinner, is clearly discernible and expected.[1] Adjusting the weight cost data to reflect non-workshared and 100% workshared mail smooths out the pattern shown in the original aggregated results that apparently form the basis of witness Clifton's cursory analysis.

The only two obvious anomalies are a drop at the 12-13-ounce increment and a significant upward spike at the last 15-16-ounce increment. These two increments have only about 34 million and 11 million pieces, respectively, out of the total of over 16 billion ECR flats, constituting only 0.2% and 0.1% of total ECR flat volumes.[2] Given

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[1] The cost pattern over the first seven ounces (the range addressed by Clifton), is particularly reliable because it encompasses 98% of total ECR volumes. Almost 86% of the ECR flat volume is in the 1-7 ounce weight cells, where there is a very shallow positive slope to the non-workshared curve, while slightly more than 3% of the volume is in the 7-16 ounce weight cells where the non-workshared curve steepens.

[2] Of all the weight increments, the 15-16 ounce increment is the one most clearly out of line with the overall pattern. The cost jumps about 8¢ in this one increment, double the next largest increment-to-increment variation. Although there is no clear explanation other than a data anomaly due to the very small volume in this increment, almost 98% of the mail in this increment is ECR basic rate mail. Thus, the big jump in the unit cost for "100% workshared" mail (*i.e.*, saturation DDU mail) in this increment is not a true cost effect, but a purely mathematical byproduct of the aberrationally high cost for basic level mail which overwhelms the adjustments for worksharing cost differences. In addition, the average weight for mail in this 15-16

(continued...)

these relatively small volumes in the very high weight increments, some anomalies are not surprising. The important point is that even with these two anomalies, the overall pattern of costs over the entire weight range, even above 8 ounces, is still quite clear. If the data were truly unreliable, one would expect the unit costs to be wildly scattered in no discernible pattern, which is clearly not the case.

2. Reliability And Consistency With Prior Weight Cost Studies

The consistency of the 1996 weight cost study results with prior such studies of BRR and carrier route further confirms its reliability. If the data were unreliable, one would expect that different studies from different years would show dramatically different patterns. That is clearly not the case. There have been at least three prior cost weight analyses of BRR and/or carrier route mail that show the same, consistent overall pattern in cost behavior: (1) a study of 1993 IOCS costs for BRR carrier route mail conducted by Christensen Associates, contained in LR-MCR-12 in Docket MC95-1; (2) a study of 1989 IOCS tallies for BRR carrier route letter mail prepared by the Office of Consumer Advocate; and (3) a study of 1982-1983 BRR costs presented by USPS witness Madison in Docket R84-1.

For ECR letters within the 0-3 ounce range, Figure 3 compares the 1996 results with the Christensen 1993 results and the OCA 1989 results. Although the absolute cost values from these three studies differ, the overall cost pattern is the same. In each case, the costs for the 0-1 ounce increment are higher than for the next two ounce

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[2](...continued)
ounce increment is exactly 16.0 ounces, suggesting that it either contains some non-ECR mail weighing in excess of 16 ounces or some data error.

increments, consistent with both the 1996 weight cost study and my explanation of them.[1] This disproves Clifton's implications that witness McGrane's 1996 results for letters under 3 ounces are either unreliable, aberrational, or "anomalous."

This same consistency with prior studies applies as well to the ECR overall cost pattern beyond 3 ounces. Figure 4 compares the non-workshared flat costs for 1996 and 1993. The curves are remarkably similar. In both, unit costs decline after the first ounce increment, level off for several increments, and then gradually increase with weight. The 1996 curve begins increasing at an earlier point around 5 ounces and has a slightly greater slope because it includes weight-related transportation costs not included in the 1993 IOCS-only costs.

This same cost pattern appears in the 1982-1983 study, shown in Figure 5. Witness Madison's results include total costs for all BRR mail (carrier route and non-carrier route combined). The same general pattern emerges though: a significant decline beyond the first ounce increment, relatively flat costs beyond the breakpoint, and an upward slope beyond 8 ounces. The fact that all these studies, conducted over a 15-year span, show a consistent weight cost curve confirms that the curve developed from the 1996 weight cost study is neither "anomalous" or "erratic."

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[1] The 1996 figures show a narrowing of the cost difference between under-1-ounce and 1-3-ounce letters, compared to the earlier studies. This reflects the fact that a portion of ECR letters are now being barcoded and processed through automation as a transitional effort to increase DPS volumes. This requires greater handling costs than before. This effect is more pronounced in the 1-3-ounce range because the flimsiness of some under-1-ounce pieces likely prevents them from being automated.

3. ECR Cost Structure And Rates

The unit cost data by ounce increment in Figure 1 demonstrate that the ECR rate structure proposed by the Postal Service is sound and well-supported by the underlying ECR cost structure, contrary to the allegations of witness Clifton. Costs below the breakpoint clearly show a flat or declining relationship with weight, consistent with the proposed minimum per piece rate structure. Above the breakpoint, costs increase only moderately with weight for non-workshared mail and, through 15 ounces, scarcely at all for 100% workshared saturation mail.

In particular, these results also demonstrate that the USPS proposed reduction in the pound rate is not only fully justified but very conservative in relation to the low weight-related costs beyond the breakpoint, contrary to the claims of AAPS witness Bradstreet. The following table compares the unit costs, in the 2-3 ounce increment (average 2.5 oz. weight) and in the 15-16 ounce increment (average 16 oz. weight), with the Postal Service's proposed ECR rates:

Costs, Rates, And Implicit Regular ECR Cost Coverages
For 2.5- and 16-oz. Flats

ECR Basic, no drop ship	2.5 oz.	16 oz.
Unit Cost	9.58¢	27.70¢
USPS Proposed Rate	16.40¢	58.50¢
Implicit Cost Coverage	**171%**	**211%**
ECR Saturation, DDU entry		
Unit Cost	3.34¢	10.75¢
USPS Proposed Rate	11.80¢	45.20¢
Implicit Cost Coverage	**353%**	**420%**

For both non-workshared and 100% workshared ECR mail, the 16-ounce pieces have a higher implicit unit contribution and cost coverage than the 2.5-ounce pieces. The implicit contributions and cost coverages of saturation mail also substantially exceed those of basic mail.

These comparisons, based on the Figure 1 unit costs in the 15-16 ounce increment, substantially *overstate* costs above the breakpoint and understate the true contribution and coverage of pound-rated mail. As noted earlier, the ECR unit costs in Figure 1 for the last 16th ounce increment are anomalously high, way out of line with the cost pattern for the other increments. If the last four ounce increments were aggregated, the resulting unit cost would be sharply lower, approximately 18.3¢ for non-workshared mail, in line with the cost pattern in the other increments below 12 ounces. If a straight "cost line" were drawn from the 3rd ounce increment to the 16th ounce increment, the line would substantially exceed the unit costs in every single weight increment between 3 and 16 ounces, especially in the increments beyond 8 ounces. Thus, an estimate of costs per pound based on the slope of that line clearly overstates true weight-related costs.

The difference between the unit costs at 2.5-ounces and 16-ounces implies a weight-related cost of about 18.1¢ per pound for non-workshared mail and 7.4¢ per pound for 100%-workshared mail -- *assuming* a straight-line weight-cost relationship between those two points. These pound costs are only a fraction of the USPS proposed 53¢ pound rate for non-drop shipped mail and 42¢ for DDU drop shipped mail. However, as Figure 1 clearly shows, a straight-line cost estimate based on the

abnormally high 16th-ounce unit cost substantially overstates the weight-cost relationship at all weight increments between 3- and 16-ounces. A far more reasonable estimate of the cost curve over that range, based either on a weighting of the costs in the 12-16 ounce increment or a conservative smoothing of the curve over the entire 3-16 ounce range would yield an even lower per pound cost.

B. ECR Cost Coverage

Witness Clifton's justification for shifting institutional cost from First Class Presort to Standard A ECR is his assertion that Standard A is "apparently" receiving a subsidy from First Class. His subsidy contention, in turn, is predicated on his assumption that the minimum-per-piece rate for Standard A mail under the breakpoint "is not cost justified" in relation to the rate and cost for first-ounce mail. (ABA/NAA-T-1, page 2)

As explained above, the ECR per piece rate structure over the first three ounces is reasonable and justified by the ECR cost structure. There is no conceivable cross subsidy because the rates charged for second- and third-ounce ECR mail far more than cover their costs. This lynchpin of witness Clifton's cross-subsidy argument is simply wrong. Beyond that, his strange concept of cross subsidy bears no relation to the correct and accepted economic and regulatory concepts. Given that Standard A, and ECR in particular, make a large contribution to institutional cost, his definition of subsidy comports with no legitimate economic definition. His use of the modifier "apparent" indicates his own discomfort with this assertion. Following cross-examination, he also provided a written response which alleges, without any

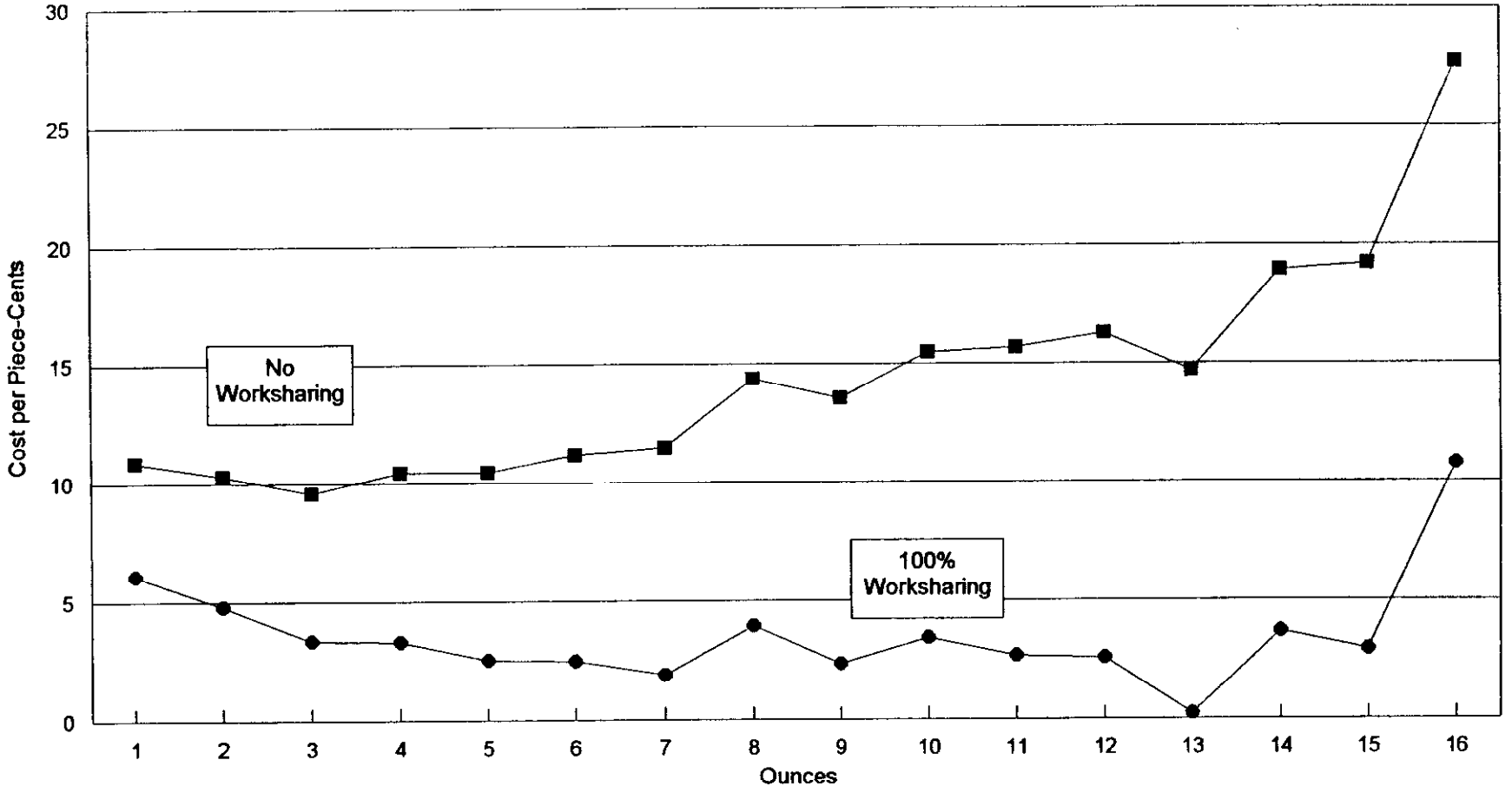
support, that Standard A does not cover its incremental costs. (2/27/98 Answers of ABA and NAA Witness Clifton to Questions Posed During Hearing)

Witness Clifton's is an extremely strained and convoluted definition of subsidy, especially when one of the supposedly "subsidized" subclasses, ECR mail, makes an institutional contribution that is more than double its marginal or short-term incremental costs. As shown in Clifton's own Table 1, the proposed cost coverage of ECR is over 228%. Even if Clifton were correct in his assertion about "below cost" rates for second-and third-ounces of Standard A mail (which he clearly is not), there would still be no legitimate basis to claim a "cross-subsidy" between Standard A Regular/ECR and First Class.

Figure 1

Average Cost per Piece

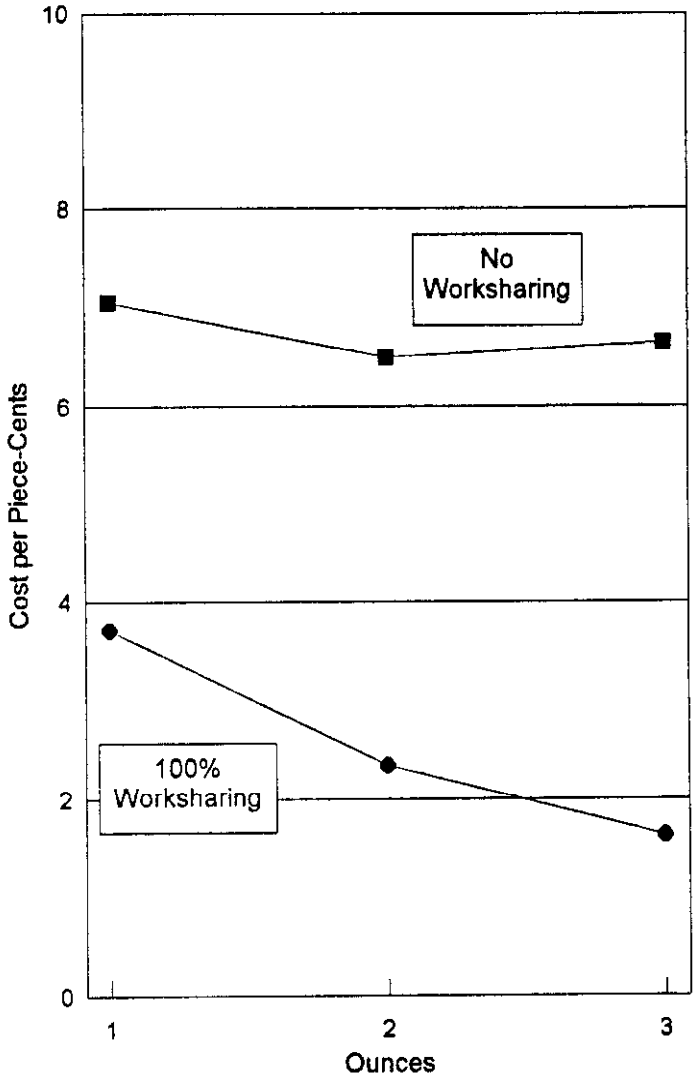
1996: ECR Flats



Sources: LR-H-182 adjusted (see ADVO Library Reference).

Figure 2

Average Cost per Piece
1996: ECR Letters

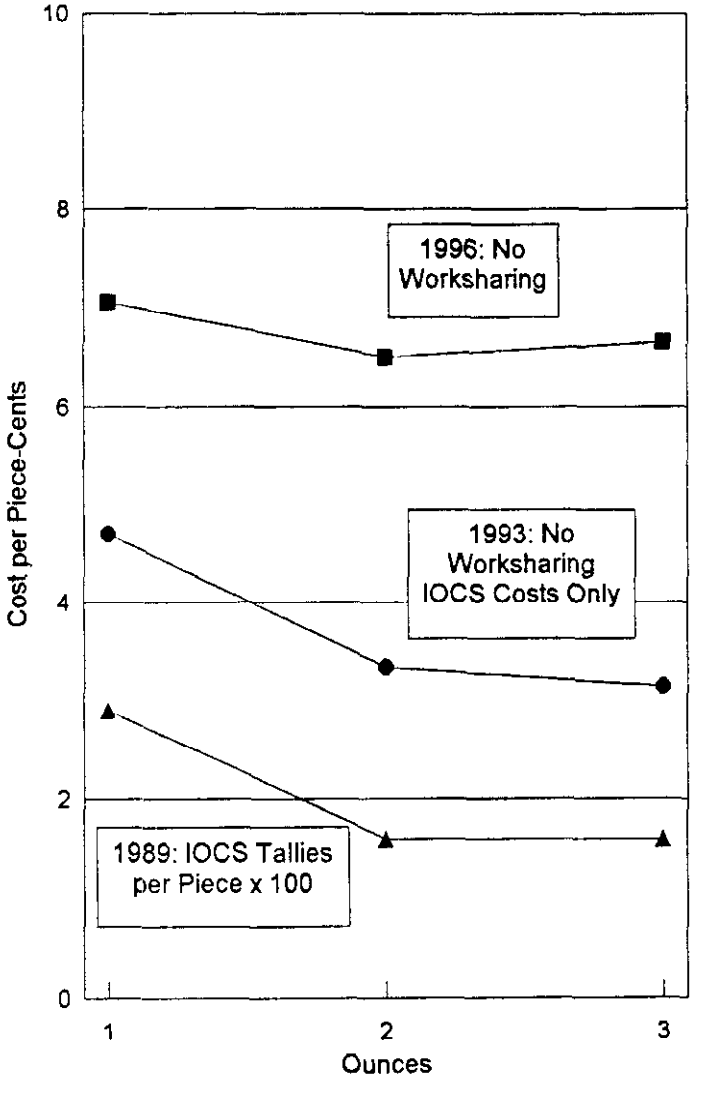


Sources: LR-H-182 adjusted (see ADVO Library Reference).

Figure 3

Average Cost per Piece

1989, 1993, and 1996: Letters

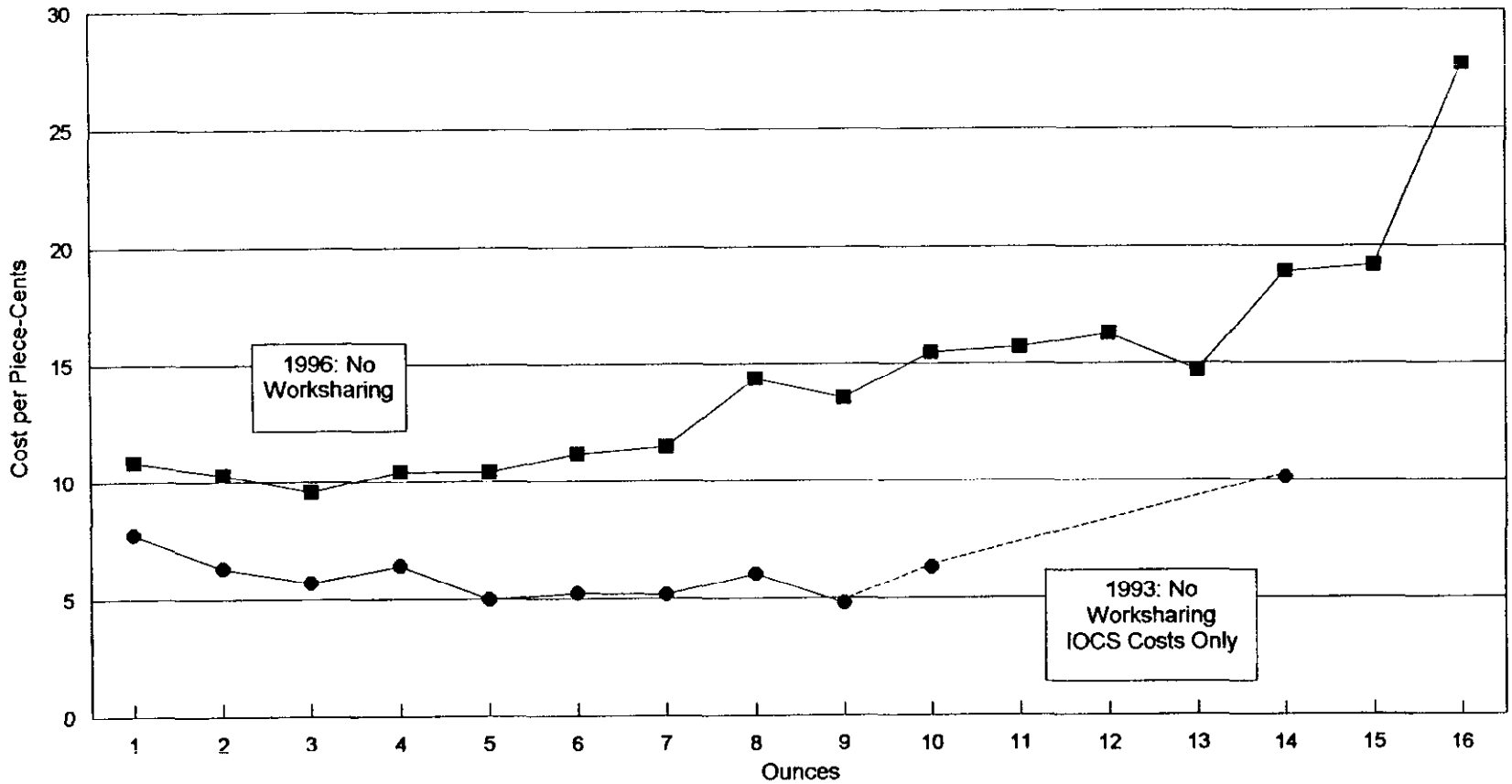


Sources: 1996: LR-H-182 adjusted (see ADVO Library Reference).
1993: LR-MCR-12 adjusted (see ADVO Library Reference).
1989: Report of the Office of Consumer Advocate, "Third-Class Weight-Shape Cost Study," Feb. 27, 1989.

Figure 4

Average Cost per Piece

1993 and 1996 No Worksharing: Flats

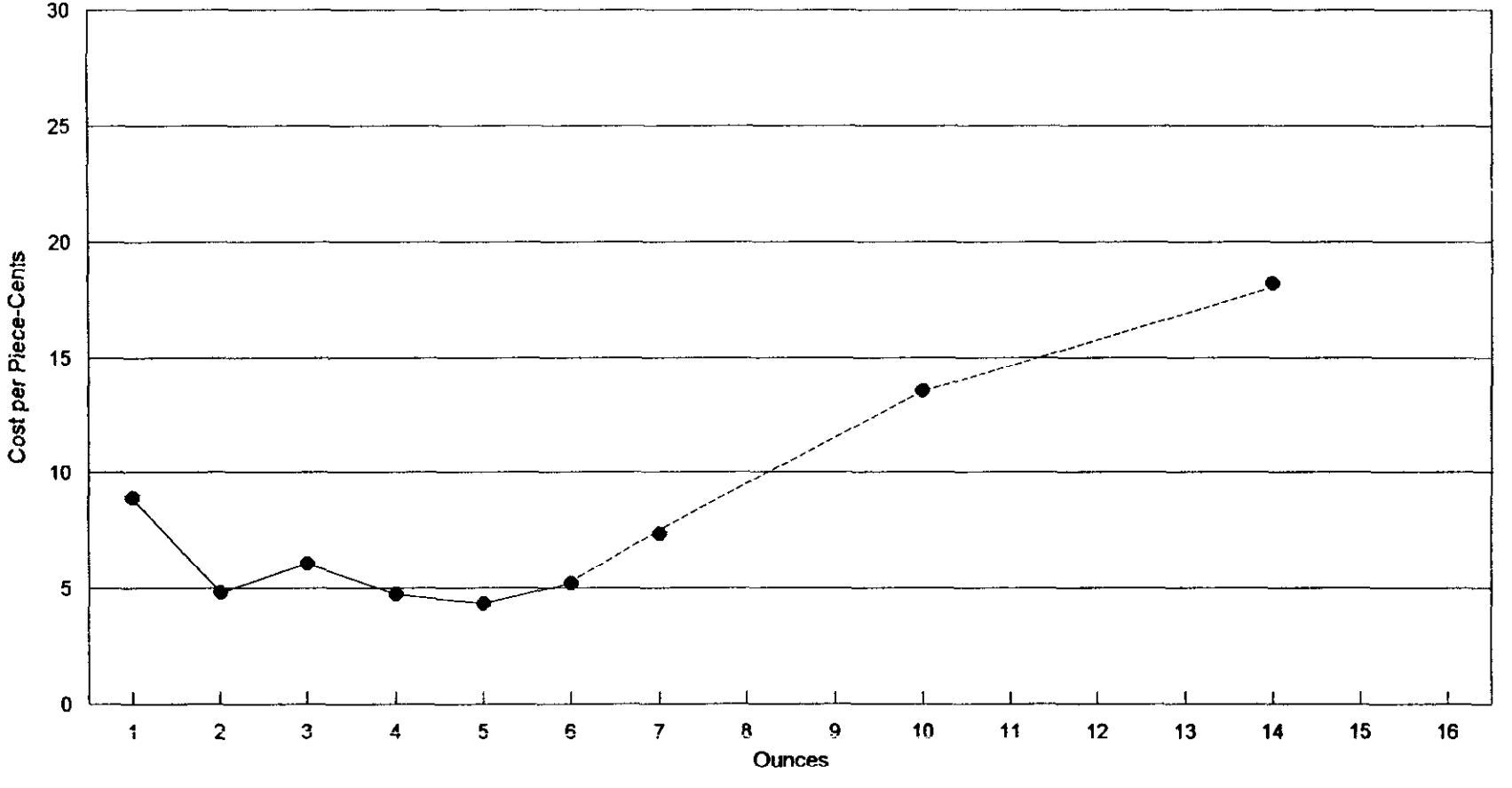


Sources: 1996: LR-H-182 adjusted (see ADVO Library Reference).
1993: LR-MCR-12 adjusted (see ADVO Library Reference).

Figure 5

Average Cost per Piece-Unadjusted

1982-83 BRR Letters and Flats Combined



Source: USPS-RT-8 (R84-1)

II. REBUTTAL TO AAPS WITNESS BRADSTREET

Although AAPS witness Bradstreet recognizes that in-office delivery costs are piece-related, he claims that out-of-office costs are weight-related and attempts to demonstrate his point with a simplistic, unrealistic example of a large increase in saturation mail weight and its effect on a city carrier park and loop route. His flawed conclusions are based on misconceptions about (1) the characteristics of typical route, loops, stops and volumes in the postal system, (2) the delivery weight capacity in the system, (3) the factors that affect carrier loops and workload, and (4) the flexibility within the system to handle additional volume efficiently.

A. City Carrier Loops and Weight

In his testimony, witness Bradstreet poses a hypothetical purporting to show the effect on carrier park and loop time of increasing the weight of a saturation mailing from 0.25 to 3.3 ounces, on a route with 600 deliveries. (AAPS-T-1, page 37) His hypothetical does not account for the fact that routes are made up of numerous small loops. He also assumes that the volume of other mail was already at or near the 35-pound satchel weight limit. In response to a USPS interrogatory asking him to elaborate on his hypothetical assuming the route was divided into ten separate loops, witness Bradstreet claims that the carrier would still have to make many extra trips to deliver the mail. (USPS/AAPS-T1-18) As discussed below, this example is extreme in its assumptions about typical route characteristics and extra trips.

1. Number of Stops on a Loop

Witness Bradstreet's discussion is based on a hypothetical carrier route with 600 stops divided into 10 loops, averaging 60 stops per loop, with each loop close to its 35 pound weight constraint. This example, however, is highly atypical. USPS data from a representative sample of residential park and loop routes, taken in 1986, show that the

average loop covers only 25.1 stops per loop -- less than half the number in witness Bradstreet's example.[1] Of all the loops, only 3% contained 60 or more stops.

The average mail weight per stop, based on CCS data, was 12.5 ounces in 1986 and 12.8 ounces in 1996.[2] Both figures produce an average of about 20 pounds of mail per loop, far below the 35-pound limit and leaving ample capacity to easily accommodate witness Bradstreet's additional 3-ounce per stop (5 pounds per loop) weight increase.

Even this may understate the available capacity on typical single-delivery stop loops, because the above data for both average stops per loop and average weight per stop include that for dismounts and short loops which serve high-volume stops such as businesses and multiple-delivery residential addresses.[3] Dismounts are established due to permanent large daily volumes as well as non-volume reasons (*e.g.*, delivery points that cannot be efficiently accessed from other loop walking paths). An increase in weight on these dismounts

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[1] This was calculated from the 1986 Foot Access Test data, taken from a representative sample of park and loop routes, made available in USPS LR E-87. (R87-1, USPS-RT-10, page 89, and TR 9346-9347) The FAT residential park and loop data are in the ADVO Library Reference.

[2] Numbers of actual CCS stops and volumes by class were derived from the USPS base year costing spreadsheets for 1986 and 1996. Piece volumes for each class were multiplied by the CRA average piece weight for each class. The class total weights were summed and divided by number of actual stops. All three stop types were averaged together. This average weight per stop includes high volume stops, thus overstating the average weight on typical single-delivery residential stops. (See the ADVO Library Reference.)

[3] The Foot Access Test data show that park and loop routes typically have a mix of loops that include dismount stops or short loops with only a few stops that may serve high-volume points such as multiple residential units and business strips adjoining residential areas. Of the total loops/dismounts, 17% served 10 or less stops. These data also show an average of 1.3 loops per parking point. USPS witness Nelson presents 1996 data showing that motorized carriers, including those on park and loop routes, deliver to a mix of routine loops and dismounts. On average, 56.5% of the parking points (which are closely correlated with number of loops) are dismounts. (USPS-T-19, WP 1.14)

does not add new dismounts, but may in fact allow use of more efficient containerization for the delivery, thus actually reducing carrier time.

A better estimate of weight per loop on "single-delivery" residential loops can be obtained by factoring out high volume stops and using a more representative average weight per single-delivery residential stop. If the 17% of loops/dismounts with 10 or less stops each are removed from the Foot Access Test data in order to eliminate most of the high-volume dismounts and business loops, then the number of single delivery stops per remaining loop averages 29.4. Using the average daily weight of 6.6 ounces per household (*i.e.*, delivery rather than stop) from the 1995 Household Diary Study, which likely is more representative of the stop weight for single delivery stops, an average "single delivery" loop receives approximately 12 pounds of mail and could even more easily accommodate a 3.3 ounce per stop increase.

In summary, the delivery system has far more capacity to handle weight volume than assumed in witness Bradstreet's examples. Moreover, as discussed below, carriers have substantial flexibility to deal with unexpected weight volume.

2. Loop and Route Restructuring

The relatively low average number of stops and weight per loop and the resulting large weight capacity in the system are due to factors other than weight. The number of city routes and loops changes periodically as a result of two piece-volume-related workload drivers: (a) in-office time to case volume and (b) number of stops and deliveries which must be covered. Given the permanent non-volume-related conditions of the geographic coverage area, (which witness Bradstreet acknowledges), each restructuring involves shifting pieces of territory to create geographically contiguous routes. This involves shifting loops or pieces of loops from one route to another and, sometimes, consolidating into a new route some loops or

pieces of loops from a few established routes. Theoretically, the result can be either more or less loops for the grouping of routes, depending upon a variety of non-volume-related factors; but, the data show and information that I have gathered indicate that generally additional, smaller loops are created from the process.

The non-volume-related or institutional factors affecting route and loop structuring include geographic coverage, groupings of addresses, special service requirements for particular addresses, traffic patterns, parking availability, safety, terrain, and maintenance of contiguous addresses within a route.[1] It also must account for interspersed dismount and curbline deliveries. Accordingly, excess weight capacity is not deliberately designed into loops but is an incidental byproduct of other more important route structuring considerations. Mail weight on loops is unlikely to be a factor in the creation or restructuring of routes or loops within a route.

3. Delivery Deferrability

Witness Bradstreet's discussion about large hypothetical increases in weight per stop and loop is also unrealistic because it ignores not only the characteristics of typical routes but also the substantial flexibility when carriers and their supervisors have to deal with

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[1] For example, a major consideration is the inherent complexity of designing loops so they do not retrace portions covered by other loops on the route. Extra parking points and shorter loops minimize a carrier's total walking time. Geography and the availability of suitable parking points are also factors. Short loops with few stops may be established for cul de sacs, streets near the edges of a carrier's route adjacent to another route, portions of a route that are somewhat geographically isolated or left untraced by other loops. Terrain and spacing between stops is also a major non-volume consideration. Hilly suburban areas with widely spaced houses will have many fewer stops per loop than close-together row or town houses in a flat urban area, not because of mail weight but because the smaller loops minimize walking (and overall run) time. Safety also affects the location and number of parking points and, hence, loop size. For example, there is a need to avoid establishment of parking points on hills, busy streets, blind corners or curves, or at points requiring the carrier to walk across busy streets. The data presented by USPS witness Nelson show some of the variety of reasons why loops are created (*e.g.*, safety, improved performance, no curbside delivery, deliveries across street, separated streets, line of travel).

unexpectedly high volumes. Carriers and supervisors know, even before the carrier begins casing the day's mail, if they have a particularly large amount of volume to deliver. ECR saturation mailings, because of their deferrability, actually give carriers more flexibility to deal with unexpected volumes than do mailings of other classes.

With saturation mailings, the carrier can defer the entire mailing for delivery the next day. Alternatively, the carrier can deliver only portions of the saturation mailing on the first day, either selectively by loop or even within a loop, and defer the remaining addresses for later delivery. For example, on a particular loop, by carrying out and delivering only the saturation mail for the first half of the loop, and deferring the pieces for the remainder of the loop, the carrier would cut in half the "additional weight per loop" that Bradstreet assumes. This is, in fact, what happens in the real world.

The combination of the excess delivery weight capacity in the system described earlier and the flexibility to deal with unexpected or unusually high mail volumes (whether saturation or other mail) through deferral of all or portions of a saturation mailing, demonstrates that the purported effects of weight alleged by witness Bradstreet are greatly overstated and unrealistic.

4. Activities Associated With Loops

As demonstrated above, the weight effect on loops is not meaningful. Even to the extent that, in some rare instances, an extra loop is required, the additional time would not be nearly as great as witness Bradstreet implies. In his example, he overstates the amount of loop-related workload such as additional satchel reloadings and walking. There is some additional time associated with additional satchel reloadings; but satchel reloading itself involves handling bundles of mail volume which must all be loaded into the satchel regardless of the number of loops. Also, carriers do not depart from their line of travel to return to their

vehicles. Parking points are established in order to minimize run time; and drive time is efficiently substituted for walk time. That is why the data presented above show nearly a one-to-one relationship between parking points and loops associated with those parking points, so that carriers can minimize their walking time.

Drive time may also increase slightly as the number of loops increases; although, for an established route, new parking points are usually on the established line of travel. Moreover, since the number of loops in the system is generally unaffected by weight, the same can be said of drive time and all other loop-related activities. For these reasons, I disagree with USPS witness Nelson's attribution of park and loop drive time on the basis of weight. Nevertheless, the USPS already attributes witness Nelson's estimate of "weight-related" drive time cost. If included in the weight cost study on a per pound basis, those drive time costs, which are clearly inappropriate and excessive, would generate only a 0.74¢ pound cost.[1]

B. Other Delivery Costs

Without any analysis or support, witness Bradstreet implies that other ECR delivery costs are also weight related. He is wrong:

(1) Approximately 41% of ECR delivery cost is represented by rural carrier costs. These are incurred on the basis of number of pieces by shape and relevant service characteristic. Moreover, the piece-related nature of rural carrier costs demonstrates that costs associated with curbline routes are not weight-related

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[1] This is calculated as ($20,226 * 1.305 * 1.152) / (4,111,416 ECR pounds),

where: $20,226,000 is the ECR park and loop drive time base year cost; 1.152 is the street support burden, and 1.305 is the piggyback.

(2) The other 59% of ECR delivery cost is city carrier out-of-office cost. This cost also varies with piece volume. Elemental load varies with shape while coverage-related load and access varies with coverage-generating characteristics. For FY96, almost 42% of accrued city out-of-office time is associated with stops coverage volume characteristics; and over 15% is associated with volume shape characteristics.[1] The remaining out-of-office activities, called street support, varies to the same extent as the number of routes (*i.e.*, total city carrier in- and out-of-office time).

(3) Approximately 25% of city volume is delivered by the 21% of city routes that are (non-park and loop) motorized or curbline. (ADVO/USPS-5 and 30) Further, even within park and loop routes, there are route segments that involve curbline or dismount deliveries. These types of routes and deliveries have no weight constraints.

C. Sensitivity Analysis of ECR Weight-Related Delivery Costs

In general, carrier park and loop costs are not weight sensitive. Even assuming hypothetically that they were, the amount that could be considered weight-related is quite small. Even if all ECR attributable drive time and street support were hypothetically assumed to be weight-related, the increase in the pound-related cost would be only 3.6¢.[2] If this amount were added to the ECR weight-related costs identified by USPS witness McGrane and in Section II of this testimony, the result would still be a pound-related cost that is only a fraction of the USPS proposed ECR pound rate.

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[1] This is calculated is ($2,423,713 + $730,559) / $7,515,110) = .42 and ($1,151,721 / $7,515,110) = .15.

[2] Calculated as [($20,226 + $94,758) * 1.305] /(4,111,416 ECR pounds). From 1996 ECR base year costs.

III. REBUTTAL TO NAA WITNESS DONLAN

The USPS proposed discounts for ECR high-density and saturation mail are based on a substantially improved cost analysis that recognizes not only delivery but mail processing unit cost differences among density-related rate categories. In the past, the substantial mail processing cost differences have been ignored. The USPS approach represents an improvement in both tracing costs to underlying mail characteristics and ratemaking efficiency.

NAA witness Donlan criticizes the USPS analysis and recommends the Commission retain the current (MC95-1) discount levels which reflect only the delivery cost differences. (NAA-T-2) He disputes the improved USPS disaggregation of mail processing costs for ECR walk-sequenced (basic rated) and non-walk-sequenced (high-density and saturation rated) mail on grounds that:

- "The available data do not represent current operating conditions." (page 12)
- "The analytical approach used by the Postal Service accounts for DPS-related mail processing costs but ignores offsetting delivery cost savings." (page 12)
- "The Postal Service has not demonstrated that its analysis reliably measures cost differences among ECR presort tiers." (page 12)

His assertions are incorrect and his recommendations should be rejected. The USPS proposed ECR rates are fully supportable.

A. ECR Non-Letter Costs and Rates

1. Mail Processing Unit Costs

The USPS develops unit mail processing cost differences between ECR walk-sequence and non-walk-sequence mail using 1996 In-Office Cost System (IOCS) data, which identifies time/cost proportions by both shape and walk-sequence endorsement. For Regular ECR, witness McGrane (a) disaggregates the base year ECR IOCS mail processing costs into letter and non-letter walk-sequencing and non-walk-sequencing categories and (b) applies the appropriate piggyback factors. (USPS-ST-44) Witness Daniel uses those costs to calculate dropship-normalized test year unit mail processing costs for the ECR letter and non-letter density-related categories. (USPS-T-29) In turn, witness Moeller converts those results to the ECR shape- and density-related rates. (USPS-T-36)

Witness Donlan criticizes the use of 1996 cost data, claiming that they do not accurately reflect costs in the post-reclass period. Of the 13 accounting periods for 1996, only the last 2.5 periods occurred after reclass. For the pre- and post-reclass periods of 1996, he presents the ECR non-letter density-related mail processsing unit costs.

MAIL PROCESSING UNIT COST DIFFERENCES BETWEEN WALK SEQUENCED AND NON-WALK-SEQUENCED STANDARD A ECR NON-LETTER MAIL	
Pre-Reclassification	
Non Walk-Sequenced	2.441¢
Walk-Sequenced	0.277¢
Difference	2.164¢
Post-Reclassification	
Non Walk-Sequenced	1.683¢
Walk-Sequenced	0.218¢
Difference	1.465¢

From these data, he concludes :

> . . . there is a substantial difference in the cost data between the pre-reclassification and post-reclassification periods . . . [and] . . . the cost difference between walk-sequenced and non walk-sequenced non-letters has declined by approximately 0.7 cents per piece since reclassification. (page 9)

and

> . . . the data used by Witness McGrane to estimate walk-sequence mail processing costs are not representative of current operating conditions . . . [and that since] . . . Witnesses Daniel and Moeller rely on these data, their estimates of mail processing units costs and the proposed discounts do not properly account for the impact of new ECR preparation and entry requirements. (page 10)

Focusing only on pre-reclass *cost differences*, he concludes that the USPS proposed discounts are too great. His alternative is to maintain the discounts at the MC95-1 level. What he ignores is the absolute decline in *cost levels* for each category. Discounts, cost savings, and passthroughs are only mechanisms used to reach the correct rate levels for each rate category. The proper emphasis should be on the cost levels for each density-related rate category.

Witness Donlan demonstrates that unit mail processing cost declined 0.7¢ or 31% in the post-reclass period while walk-sequenced unit cost declined 0.06¢ or 21%. Moreover, these cost savings are not reflected in the test-year results developed by witness Daniel.[1] If witness Donlan's post-reclass data are correct, then ECR unit costs would have to be revised as follows.

[1] The USPS roll-forward of 1996 ECR non-letter data does not include such cost savings. This is clear in witness Daniel's Exhibit USPS-29D, page 1, where she "rolls-forward" 1996 mail processing costs into the test year. Her factor of 0.9915 reconciles the 1996 cost (calculated as base year unit cost multiplied by the average wage rate increase from base year to test year) with the unit cost implicit in the test year data and USPS LR H-106. Thus, the CRA roll-forward does not include ECR non-letter cost savings of the magnitude estimated by witness Donlan.

Standard A Regular ECR
Unit Non-Letter Cost Estimates (for Discounts)

	Mail Processing Plus Delivery	Mail Processing	Delivery
USPS-29C			
Basic	8.6042¢	2.7552¢	5.8490¢
Hi-Density	5.8426	0.6856	5.1570
Saturation	4.1816	0.6856	3.4960
USPS-29C (Adjusted to Reflect Cost Savings)[1]			
Basic	7.9778¢	2.1288¢	5.8490¢
Hi-Density	5.7949	0.6379	5.1570
Saturation	4.1339	0.6379	3.4960

Given his post-reclass cost savings, total ECR non-letter costs should be reduced by $71.5 million.[2] If witness Donlan's post-reclass data are reliable enough to refute the

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[1] Based on the approach described in USPS-29C, page 2, and USPS-29-D, pages 1 and 3, the adjusted mail processing costs in the table are calculated as follows:

non-walk-sequenced 1.683¢ * 1.053 * .9915 = 1.7571¢, and
1.7571¢ + 0.3717¢ = 2.1288¢

walk-sequenced 0.218¢ * 1.053 * .9915 = 0.2276¢, and
0.2276¢ + 0.4103¢ = 0.6379¢.

[2] This is calculated as:

volume * (difference between USPS unit cost and Adjusted unit cost).

Non-walk-sequenced savings	10,706.61 * (2.7552¢ - 2.1288¢)	=	$67.06M
Walk-sequenced savings	9,323.43 * (0.6856¢ - 0.6379¢)	=	$4.45M
Total savings	$67.06 + $4.45	=	$71.5M.

USPS estimated cost differences, they should be reliable enough to re-estimate those cost differences and reduce test year cost levels.

2. ECR Non-Letter Density Discounts

Even if one believes witness Donlan's data, the USPS proposed ECR non-letter density-based rate differentials are reasonable. When the test year non-letter costs are adjusted to reflect his cost savings, the USPS proposed non-letter density-based rate differentials are substantially less than the underlying cost differences and generate extremely conservative passthroughs. Moreover, the delivery cost difference alone supports the USPS-proposed Basic to Saturation rate differential of 2.3¢. The delivery cost differences are:

- 2.353¢ for test year 1998 from USPS-29C, or
- 2.4759¢ from the MC95-1 Opinion cost differential, updated to test year 1998.[1]

Witness Donlan's recommendation to retain the MC95-1 discount level is completely unjustified. Even if there were reason to be concerned about reclass impacts on witness McGrane's results, the extremely small passthrough of the cost difference should allay them. However, as discussed below, there is no reason to be concerned.

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[1] This was derived from Table V-5 of the MC95-1 Opinion (page V-265): basic to saturation non-letter cost difference of 2.3830¢ multiplied by the 1995 to 1998 weighted-average city and rural carrier wage rate ratio of 1.039.

Standard A Regular ECR Non-Letters
Mail Processing and Delivery Test Year Cost Differences
Supporting Density Discounts

	Differentials Basic to High-Density	Differentials Basic to Saturation
USPS Mail Processing and Delivery Cost (USPS-29C)	2.7616¢	4.4226¢
USPS Mail Processing and Delivery Cost (USPS-29C Adjusted for Reclass Savings)	2.1829¢	3.8439¢
USPS Proposed Rate	1.1000¢	2.3000¢
Passthrough (USPS-29C)	39.8%	52.0%
Passthrough (USPS-29C Adjusted for Reclass Savings)	50.4%	59.8%
MC95-1 Rate (Implicit Passthrough Based on Adjustment for Reclass Savings)	0.8000¢ (36.6%)	1.8000¢ (46.8%)

B. ECR Letter Costs and Rates

Witness Donlan takes a different approach on the density discounts for ECR letters; he does not even show pre- and post-reclass letter mail processing costs. Perhaps this is because, relative to base year costs, the post-reclass cost difference between ECR walk-sequenced and non-walk-sequenced letters has increased 1.863¢ or almost 136%. The majority of that increase appears to be related to increased automation. Witness Donlan claims that the USPS has not recognized ECR letter delivery cost savings and, therefore, the USPS cost estimates overstate the actual cost

difference between walk-sequenced and non-walk-sequenced letter mail, which causes proposed ECR basic letter costs and rates to be too high.

He is wrong here as well. First, the cost differential he appears concerned about is the one between basic-rated and high-density/saturation-rated letters while the one he derives is the post-reclass difference between the average of automation-rated/basic-rated and high-density/saturation-rated letters. Second, he fails to recognize that just as the automation-related mail processing costs are included within the base year ECR letter costs, so are the automation-related delivery cost savings, to the extent there are any.

1. Mail Processing Unit Costs

The following table shows ECR letter mail processing costs. Unlike non-letter unit cost which decreased, the post-reclass unit cost for non-walk-sequenced letters increased 1.843¢. But, post-reclass walk-sequenced letter unit cost declined, by 0.02¢ or almost 6%. A closer review of the data shows that non-walk-sequenced letters experienced more automation in the post-reclass period than in pre-class as reflected by the unit cost increase between the two periods. This is not surprising since reclass resulted in an ECR Automation Letter rate category which did not exist before.

MAIL PROCESSING UNIT COST DIFFERENCES BETWEEN WALK SEQUENCED AND NON-WALK-SEQUENCED STANDARD A ECR LETTER MAIL	
Pre-Reclassification	
Non Walk-Sequenced	1.711¢
Walk-Sequenced	0.340¢
Difference	1.371¢
Post-Reclassification	
Non Walk-Sequenced	3.554¢
Walk-Sequenced	0.320¢
Difference	3.234¢

To develop the rate differential between basic-rated and high-density/saturation letters, however, the most appropriate cost differential is one based on either pre-reclass or average base year data: 1.371¢ or 1.570¢, respectively. The USPS choice of the latter appears more appropriate because (1) it is based on a full year of data which is substantially more reliable and (2) the related dropship characteristics are identifiable for use in normalizing unit mail processing costs among the letter categories.

However, the post-reclass increase in automation mail processing cost does not appear to be solely the result of the new automation carrier route letter category. From the data presented by witnesses McGrane and Donlan, it appears that basic-rate and walk-sequenced ECR letters were also automated in the base year. The former is evident from the large increases in OCR, remote encoding and platform costs for non-walk-sequenced letters while the latter is confirmed by the fact that there are BCS and

OCR processing costs attributed to walk-sequenced letters.[1] This is consistent with USPS statements that, as a transitional step required to generate enough DPS volume to ensure system-wide DPS cost savings, it automates walk-sequenced ECR letter mail under certain conditions. (MC95-1, USPS-T-2, page 78; see also MC95-1, USPS-RT-5, pages 28-30) Thus, it is clear that, for both the base and test years, automation mail processing costs are associated with all categories of ECR letters. This is important to know when assessing the extent to which the USPS has recognized the presence of DPS-related delivery cost.

2. Unit Delivery Costs

USPS witness Hume (USPS-T-18) calculates unit delivery costs for the four rate categories of ECR letters. He de-averages base-year attributable delivery costs for ECR letters and then projects them to the test year along with their piggybacks. Since base-year mail processing cost data show that all categories of ECR letters experience automation, then it follows logically that all automation-related delivery cost savings associated with that volume are included in base-year delivery costs. Thus, both non-walk-sequenced and walk-sequenced letters are credited with automation-related delivery cost savings experienced during the base year. And, by starting with delivery costs which implicitly include these cost savings, witness Hume

[1] For example, the post-reclass period data show that BCS and OCR unit cost for walk-sequenced letters represents 31.8% of total walk-sequenced letter mail processing cost.

has implicitly included them in his analysis of ECR letter delivery costs.[1] Further, although apparently ignored by witness Donlan, witness Hume specifically calculates additional DPS-related delivery cost savings for automation ECR letters, recognizing the fact that the USPS intends to automate those letters to the maximum extent possible.

Accordingly, witness Donlan is incorrect in his assertion that DPS delivery savings have not been attributed to ECR letters. Witness Hume has explicitly identified DPS delivery savings for automation-rate ECR letters; and, to the extent there are DPS delivery savings for ECR letters, he has included them in the base and test year unit delivery costs for each non-automation-rate ECR letter category.[2] As a result, the test

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[1] This is true for city and rural delivery costs. However, the USPS distribution key for rural non-DPS letters and rural Sector Segment/DPS letters delivered is incorrect in at least two respects. First, the non-DPS letters cost is distributed on the basis of total letters (including Sector Segment and DPS letters). This results in the ECR non-DPS letter cost being too low. (See, *e.g.*, USPS/MPA-T3-1, 2, and 3.) Second, the Sector Segment/DPS letters cost is distributed with a faulty key, derived from an apparently outdated study, which does not recognize the substantial numbers of ECR letters that are DPS. Separately, ECR rural flat cost is also overstated by approximately $4.0 million in the test year, with piggybacks. (Exhibit MPA 3-3, 2/11/98, shows the correction for ECR flats but does not show that the non-DPS/DPS distribution keys are flawed and therefore do not allocate DPS savings to ECR letters.) These errors should be corrected and, when correcting the distribution keys, the Commission should recognize that ECR letters also generate rural delivery DPS savings. Undoubtedly, if the distribution key is incorrect for ECR, it is likely incorrect for other subclasses as well. Since there does not appear to be a representative Sector Segment/DPS distribution key, one way to distribute these savings among the subclasses is to simply sum all rural letter costs together and distribute them on the basis of total letters.

[2] This analysis assumes that USPS automation of non-automation ECR letters generates a delivery cost savings relative to the delivery cost which they would otherwise incur. If, however, ECR letters are experiencing additional automation cost (continued...)

year mail processing and delivery costs for non-automation-rate letters match in terms of the automation costs and savings. However, a test-year *increase* in delivery cost savings for non-automation ECR letters, associated with witness Donlan's post-reclass increase in automation mail processing cost is not projected by the USPS, likely for at least two sound reasons:

- There is no way to measure the volume of base-year non-automation ECR letters which have been included in the DPS mailstream; and
- Diversion of non-automation ECR letters to the DPS mailstream is only a transitional step.

Neither of these supports witness Donlan's position.

3. ECR Letter Density Discounts

The USPS calculated cost differences among ECR letter rate categories are the most reasonable and reliable estimates available. They also make considerable sense. When converted to rate differentials reflecting near 100% passthroughs, they support the USPS policy of encouraging efficient conversion of ECR basic-rated letters to the Automation 5-Digit and Carrier Route categories.

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[2](...continued)
in order to increase cost savings for other letters in the system (rather than to increase cost savings which can be captured in the ECR letter delivery cost), then ECR should not be attributed the automation-related mail processing costs. Under either interpretation, however, test year ECR letter costs are overstated.

Standard A Regular ECR Letters
Mail Processing and Delivery Test Year Cost Differences
Supporting Density Discounts

	Differential Basic to High-Density	Differential Basic to Saturation
USPS Mail Processing and Delivery Cost (USPS-29C)	2.1996¢	3.1066¢
USPS Mail Processing and Delivery Cost (USPS-29C Adjusted to Pre-Reclass Mail Processing Cost)	2.0082¢	2.9152¢
USPS Proposed Rate	2.1000¢	3.0000
Passthrough (USPS-29C)	95.5%	96.6%
Passthrough (USPS-29C Adjusted to Pre-Reclass Mail Processing Cost)	104.6%	102.9%
MC95-1 Rate (Implicit Passthrough)	0.8000¢ (38.3%)	1.7000¢ (54.9%)

C. Reliability of the IOCS Cost Data

Witness Donlan claims there is no indication of the reliability of the density-related mail processing cost data developed by witness McGrane. However, his apparent concern about reliability does not prevent him from drawing conclusions and making recommendations on the basis of a division of that same data into two much smaller portions: (1) a "pre-reclass period" which is approximately 42 weeks and (2) a post-reclass period which is approximately 11 weeks. He does not even attempt to explore the possibility that the data should be adjusted to (1) recognize seasonal variations in operational productivities, or (2) differences in proportions of high-density and saturation volumes or proportions of drop-shipment usage. Nor does he attempt to

verify that the costs and volumes for the two periods are correctly matched. For those reasons alone, the partial-year data are clearly less reliable than the base-year data developed by witnesses McGrane and Daniel. Yet he considers them sufficiently reliable to state with certainty that there are decisive reclass cost changes which will continue at that level past the base year.

Operationally, however, there are clear density-related mail processing cost differences and witness McGrane's results are the best estimate of those cost differences. In particular, they are considerably more reliable estimates than those which assume there is *no* difference. Even witness Donlan does not question the operational realities. There can be no other reasonable explanation for the large density-related cost differences for both ECR letters and non-letters -- both in Regular Rate and Non-Profit. Even witness Donlan's disaggregated pre- and post-reclass cost differences are substantial. Increases in density correspond to decreases in unit cost. Mailings with greater density reduce costs because:

- They are entered in more efficient containers (*e.g.*, pallets or containers),
- They have more pieces in bundles, trays, and other containers (container handling time is spread across more units), and
- They bypass certain operations that less-dense mailings require (*e.g.*, opening and dumping 5-digit sacks, clerk/mailhandler distribution of individual bundles to carrier route).

Given that there are clear density-related mail handling differences, as even witness Donlan's own results show, it is wrong to ignore them and pretend that all ECR letters and non-letters incur the same unit mail processing cost, regardless of density. Costs based on such a false assumption are obviously less reliable than 1996 costs.

Even he does not question the appropriateness of density rate differentials derived from the combined mail processing and delivery cost differentials. The USPS-proposed ECR density-related cost differentials reflect reliable cost-tracing that is necessary for efficient ratemaking.

IV. REBUTTAL TO WITNESS CHOWN

NAA witness Chown has again offered a version of her functionalized institutional costs, fashioning "weighted attributable costs" as a basis for establishing pricing markups. (NAA-T-1) It suffers the same defects as her closely-related R90-1 proposal. Although she has avoided discussing the effects her proposal would have on rates by deferring to the Commission, its obvious aim is to substantially increase rates for price-sensitive ECR mail that competes with newspapers.

A. Witness Chown's "Problem"

1. Her Ostensible Problem

Witness Chown claims there is a problem with the current method of assigning institutional cost. According to her, the markup method can "result in a low institutional cost assignment for subclasses that primarily use mail functions for which few costs are attributed, even if the provision of these functions causes the Postal Service to incur substantial institutional costs." (page 4) Although she does not and cannot claim that low-cost subclasses are being subsidized, her illustration of the "problem" involves a serious cross-subsidy among subclasses which could never occur in postal ratemaking.

Her illustration describes three classes and two functions. Classes A and C use both functions while Class B uses only one function, which happens to have a small amount of institutional cost. With an equal percentage markup, she shows that Class B contributes to the institutional costs of both functions, thus it subsidizes Classes A and C. According to witness Chown, her approach is required in order to avoid such situations.

However, in this example, it is easy to identify the subsidy problem. Classes A and C are not covering their combined incremental costs while Class B covers more than its standalone cost. A simple, straight-forward incremental cost test can identify this; witness Chown's convoluted "functional" approach is not required to avoid such an obvious problem. Further, this is not even a real problem for postal rates. With only two minor exceptions, costs from each of witness Chown's four functional components are attributed to each of the subclasses.[1] All subclasses use delivery service which includes the bulk of postal institutional cost and all subclasses contribute to delivery service institutional cost. As long as all subclasses recover the total of all delivery service costs, there is no postal cross-subsidy problem, as witness Chown describes it, and no need for her awkward and convoluted solution.[2]

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[1] See Exhibit NAA-1B, page 2 of 2. The two minor exceptions are that Mailgrams and Nonprofit Periodicals are not attributed any window service attributable cost.

[2] Although the ostensible purpose of witness Chown's approach is to avoid subsidies, she ignores the most likely source of them. And, her approach could actually increase the likelihood of their occurrence. Since it links institutional cost with attributable cost, her approach shifts institutional delivery cost away from First Class and to ECR, whose rates, on average, are already set at well over two times their attributable cost. However, a significant portion of this institutional cost can be considered incremental to First Class; if First Class were eliminated from the system, there undoubtedly would be a substantial system restructuring which would eliminate a significant amount of institutional cost. Although this cost cannot be easily measured, it nevertheless exists. Since her approach would shift institutional cost away from First Class and toward ECR, it substantially increases the likelihood that (a) ECR rates may rise above their stand-alone level, and (b) First Class rates may dip below their longer-run incremental cost level.

2. Her Real Problem

Witness Chown's real problem is that she needs a reason to increase rates for an extremely low-cost, high-contribution subclass which happens to be strong competition to the newspapers, forcing them to offer innovative and reasonable-cost services to their advertisers and consumers. Since witness Chown cannot find any legitimate reason to increase ECR rates, she alleges that, because of worksharing, ECR mail is not paying its fair share of postal institutional costs. And, she devises a "metric" which blurs the true ECR marginal cost and ECR market and demand conditions. Her allegations are self-serving. In fact, ECR is paying more than an economically efficient share of postal institutional costs.

ECR mailers incur substantial fixed and variable costs to perform internal worksharing, even prior to paying their postal rates. They cover their own worksharing "institutional" and variable costs; they cover their postal attributable costs; and they make a large contribution to postal institutional costs. Further, the presence of their mail in the postal system, because of delivery scale and scope economies, reduces both average attributable delivery cost and average per piece contribution for all mailers. And, in the process of all this, they compete vigorously in the open market among themselves and with other forms of advertising distribution and serve a variety of advertisers and consumers who depend upon their availability. They make a large contribution to postal institutional costs. They also make a large contribution to the national economy. And, their strong presence keeps the entire advertising distribution market competitive. Further, carrier route, now ECR, mailers have been doing this for

decades. There is nothing new in terms of ECR costs or worksharing that warrants an increase in rates based on a contrived "weighting" of attributable costs.

Under economically efficient ratemaking, the rates for such a subclass would recognize its true marginal costs which derive from the postal delivery system scale and scope economies, its mailers' own internal worksharing efforts, and their particular market and demand characteristics. Under these conditions, efficient ratemaking would generate rates which (a) encourage the continued efficient use of the postal delivery system for all mailers and (b) preserve the national economic benefits of a competitive advertising distribution market. ECR attributable costs should be marked up with a view towards the large and important contributions ECR mailers make to the entire system and economy. This is exactly the efficient ratemaking effect that witness Chown's approach is designed to offset.

B. Weighted Attributable Costs

In witness Chown's approach, total system attributable costs are redistributed to the four postal functions on the basis of the institutional cost in those functions. Attributable costs for functions with greater proportions of institutional costs are given greater weight and those for functions with lesser proportions of institutional cost are given lesser weight. This links institutional and attributable cost in a way that suggests that attributable cost causes institutional cost. However, if there were some true linkage, it would have already been identified and the "institutional" cost attributed on the basis of that linkage. There is no cost-causal linkage. Because she needs to blur the effect of the true marginal delivery cost to ECR, witness Chown improperly relates

institutional delivery costs to marginal costs. As the benefits from scale and scope economies in delivery increase, her "metric" would also increase ECR "weighted attributable costs." Instead of correctly recognizing the declining marginal costs and increasing economic benefits of such a cost structure, her "metric" would have just the opposite effect. Ratemaking based on such costs would be completely distorted and generate entirely wrong price signals. Rather than benefit from such economies by adding volume to the system, it would discourage the most price-sensitive volume.

Accordingly, witness Chown's weighted attributable costs have no economic meaning. Even she acknowledges that they have no economic significance and claims they are not even costs at all, but merely a "metric." (TR13307, 13311) Yet they represent dollars that, for pricing purposes, are taken from the attributable costs of some subclasses and added on top of those for other subclasses (notably ECR) to establish a base upon which she believes pricing markups should be applied to generate contributions by class. For ECR mail, her weighted attributable costs are nothing more than attributable costs marked up by 65%, upon which a further markup is applied to derive an additional contribution. Her "metric" should be rejected for what it is: a meaningless, biased contrivance.

C. Obfuscation of the Ratemaking Process

Witness Chown's approach would obscure the information that the Commission should have to make responsible, efficient markup decisions. It would undermine the process of determining fair and reasonable rates. With her convoluted approach, the Commission would have to markup something other than true attributable or marginal

costs. It would have to set a "markup" for a particular subclass without immediately knowing the real rate level it had set or the impact of that rate level on the particular subclass and its mailers. That important information would not be known until the Commission translated its "markup" decisions to the real subclass attributable costs. This is an extremely awkward, inefficient, and unnecessary way to set rates. Because of the obfuscation, it also increases the possibility of unintended and/or absurd consequences. Of course, this is just what a competitor to the postal system would want to occur.

For example, if the USPS proposed cost coverages were applied to "weighted attributable costs", the result would be a roughly 40% increase in ECR rates, with reductions for many other subclasses. That result could easily be obscured by the convoluted ratemaking approach by which it was developed. However, such a rate increase would have a serious impact on low-cost ECR mail, the postal system, and the economy. It would penalize ECR mailers which perform a lot of costly worksharing, make a large contribution, and are most subject to competitive diversion. Over time, it could drive such mail out of the system, leaving other mail with higher rates and leaving many print advertisers with higher cost distributors and less distribution market choices. Overall costs would increase for both mailers remaining in the system and for advertisers diverted to alternatives. And, there would be a net loss to the national economy as total advertising output would be reduced.

The only way to avoid such a ridiculous result would be to adopt dramatically different cost coverages to retain reasonable, economically sound rates that consider

market and demand factors. Witness Chown essentially concedes that the current cost coverage relationships would likely be inappropriate for use in marking up her "weighted" attributable costs. (TR13424) The end result could well be re-weighted cost coverages that, when applied to her weighted attributable costs, produce the same rates as proposed by the USPS under the current approach.[1] If that is the case, then why should the Commission take such a convoluted approach to get to the same result?

D. The Correct Approach

The USPS has taken care to use the correct costing and ratemaking principles. It has strived to identify correct volume-variable or marginal costs; it offers a set of efficient Ramsey rates which can be used as an aid for allocating institutional cost among the subclasses; and it provides short-run incremental subclass costs which can be used to identify potential cross-subsidies. It also provides a thoughtful markup proposal which reflects, to some extent, the market and demand conditions for each

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[1] Witness Chown's approach produces other absurd results as well. It is extremely sensitive to changes in costs and costing methods. In her exhibits, she shows that under the USPS proposed costing method, the "weighted" attributable costs for ECR would be 65% higher than actual attributable costs, while First Class would have a weighted cost below actual attributable costs. Yet if the Commission were to reject the USPS proposal on mail processing variability and adopt a 100% variability, the effect under her approach would be to substantially increase the "weighting" of delivery costs and, as a result, increase the contribution for ECR mail relative to other mail, and First Class in particular. This instability would persist, requiring case by case changes in coverage relationships in order to avoid large rate fluctuations due to intervening cost changes.

1 subclass. These are the correct tools to use in setting efficient rates. Witness Chown's
2 proposal adds nothing of merit. Instead, her biased proposal unnecessarily complicates
3 and confuses the Commission's ratemaking responsibilities.

V. REBUTTAL TO USPS WITNESS BARON

In my testimony in response to Commission Notice of Inquiry No. 3 concerning delivery carrier load time (JP-NOI-1), I present the correct approach to attribution of load time, explain that the mismatch between the LTV modeled load time and elasticities and the STS estimate of accrued load time necessarily results in a substantial overstatement of attributable load time costs, and present a mathematical demonstration of this problem. I subsequently demonstrate how the three Propositions presented in the Presiding Officer's Notice of Areas of Likely Inquiry at the Hearing, based on my mathematical model, confirm the correctness of my approach.

At the hearing, USPS witness Baron claimed that the average stop load time predictions from the LTV stop load time models are invalid and that my derivation of system load time variability, therefore, relied upon an "invalid initial equation." He stated that using average stop volume in the models does not give average stop load times. (TR16166-16167) His comments resurrect the issue of correct variability calculation: should it be evaluated at the system-level mean value or at some more *disaggregated level*?

In any case, under the Commission's R87-1 and R90-1 point estimate of the mean value approach,[1] which witness Baron himself applied, the system-level variability estimate derived by the Commission in Proposition 2 is correct. (TR16174) Moreover, even if more disaggregated variability methods are used, the same underlying variability measurement concepts described in my direct testimony and Proposition 1 are appropriate, and the same problem I identified in my testimony -- the

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[1] R90-1 *Opinion*, page III-16.

mismatch between STS load time and LTV variability -- would still exist. (TR16172-16174) In any circumstance, this inherent core problem needs to be corrected either by (1) treating the modeled LTV load time as the correct measure of load time for application of the elemental variability or (2) substantially adjusting downward the elasticities from the LTV model that are applied to the STS estimate of load time. Under the first correction, a separate fixed stop time correction is necessary as I have proposed.

Separately, witness Baron states that the LTV data contained "relatively few observations on saturation flats." (TR 16155) If the LTV volumes are representative of volumes in the system for that year (end of FY85 and beginning of FY86), and I have no reason to believe they are not, then he is wrong. There was proportionately more carrier route and saturation mail in the system in 1986 than in 1996.

A. The Variability Disaggregation Issue

In R90-1, ADVO witness Lerner described city carrier street time variability measurement as a stops or route-level concept. (ADVO-T-1) Because the USPS uses stop or route level models, variability measurement should be conducted at the operational level, either as individual stops or individual routes. He demonstrated that measuring system variability at mean volume (for stops or routes), as a single point estimate, using the operational level models overstates the true variability when the variability function is concave. However, the system level variability can be correctly

estimated in all cases as the cost-weighted sum of the separately developed variabilities (*i.e.*, for each stop or route).[1]

Witness Lerner's approach was opposed by both USPS and OCA witnesses; and the Commission chose not to adopt his or any of the other disaggregated approaches proposed by UPS and MOAA *et al.* witnesses, pending further study of the entire issue:

> There is some substance to the arguments opposing use of the sample mean on this record. As a result, we are more cautious in our conclusion that the sample mean is generally suitable for evaluating carrier street time functions. . . . Further investigation might lead us to reevaluate the suitability of using the sample mean in other functional areas as well. (page III-16, paragraph 3035)

The Commission decided to evaluate variabilities at the system mean volume level.

B. Interpretation of the Commission-Approved Mean Value Approach

In adopting the mean value approach to load cost and variability measurement, the Commission chose to interpret the average of the stop volumes by stop type as the mean applying to all stops within the corresponding stops types. In this case, the derivation of system-wide load time variability as a function of average system-wide stop volumes, in the form shown in Proposition 1, is entirely correct. All stops are literally assumed to have constant and equal stop volumes and therefore the load time per stop is also constant and equal for each and every stop in the system. The variability so derived is interpreted as representative of the entire system load time variability.

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[1] The cost-weighting approach is simply an extension of how function-level variabilities are aggregated to the system level for city carrier street time under the existing Commission and USPS approaches.

However with stop-to-stop variations in stop volume, these assumptions over-simplify the real situation. If there are individual stop differences in volumes, then estimating elemental load variabilities at the mean value of the stop volumes is not an accurate measure of the underlying system level relationship. With the economies indicated in the LTV models, the mean value approach overstates the true system level variability. Accordingly, a disaggregated approach to variability measurement is required to yield the correct lower elemental variabilities.[1] Even in this case, though, the total load time variability indicated in Proposition 2 must be applied in disaggregated form to yield the correct system level estimate.

C. A Disaggregated Approach

1. Disaggregated Variability Estimation

Ideally, correct system level variability estimation requires stops to be aggregated into homogenous groupings or strata where the underlying stop level volumes and physical characteristics are essentially the same. For ease of exposition here, these groupings are called "routes."[2] Modeled stop load times and variability estimates are then accurately captured and stratified according to different stop level characteristics and volumes that vary from route to route. When properly weighted, these separate variabilities, estimated as indicated by Proposition 2, can then be aggregated to determine the underlying system level relationship.

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[1] The Commission called this "Jensen's Inequality." If the function is concave, the average of the function-predicted times or variabilities for the individual stop or route level volumes is less than those predicted from the function at mean level volume. (R90-1 *Opinion*, page III-15-16)

[2] Operationally, however, stops on a single route may differ considerably.

To show the essentials, assume a collection of (n) number of routes, representative of the entire system of routes, where each route represents a collection of homogenous stops. Route specific stops are homogenous in all characteristics - they all have the same stop volumes and physical characteristics that affect load time. Then for each route (i), the route-specific total load time can be indicated as:

$$L(Vi) = g(Vi/S(Vi))*S(Vi).$$

This is the functional relationship for total load time, now expressed at the route level, for route (i). Note that in this case volume per stop (Vi/Si) is the same on each stop. Thus the actual load time per stop, g(Vi/Si), is also the same for all stops on the route.

System level load time (L_S) is then given by the sum of the route specific load times:

$$L_S = \sum L(Vi).$$

If load time is directly measured at the system level with the estimating relationship $L_S(V_S)$, where (Vs) is the sum of all route level volumes, then system level variability could be estimated directly using this relationship as:

$$E = [d(L_S(V_S))/dV_S]*(V_S/L_S).$$

However, because the estimating relationships are at the route level, route (i) volume per stop must be used instead. Small changes in system load time (dL_S) are measured by sum of the route (i) load time changes:

$$dL_S = \sum (dL(Vi)/dVi)*dVi.$$

Then dividing by (dV_S) gives the system level marginal change in load time with respect to system volume:

$$dL_S/dV_S = \sum (dL(Vi)/dVi)*dVi/dV_S.$$

The marginal change in system load time is shown as a weighted average of the route-specific marginal load times. The route-specific weighting terms (dVi/dV_s) express the marginal changes in route volumes as system volume varies. The weighting terms are essentially the probabilities that any given piece will affect a particular route.

With respect to these probabilities, assume that the volume variations at the system level and for all routes are proportional. For example in a two route system, this means that if volume on one route is twice as high as on the second route, then it is always twice as high, regardless of the total (system) volume. This is equivalent to saying that the probability of a piece going to the first route is always 67 percent and the probability of it going to the second route is always 33 percent. In the (n) route case, proportional variations in volume imply $(dV_s/V_s) = (dVi/Vi)$ for all i from 1 to (n), or equivalently $(dVi/dV_s) = (Vi/V_s)$ for all (i). Then substituting for (dVi/dV_s) in the system marginal load time expression gives:

$$dL_s/dV_s = \sum (dL(Vi)/dVi)*(Vi/V_s).$$

System marginal load time is shown as the sum of the volume-weighted averages of the route-specific marginal load times. These weights are also the probabilities that each additional piece falls on the corresponding routes.

System level variability is then given by:

$$E = (dL_s/dV_s)*(V_s/L_s) = \sum (dL(Vi)/dVi)*(Vi/V_s)*(V_s/L_s)$$

$$= \sum (dL(Vi)/dVi)*(Vi/L_s)$$

$$= \sum (dL(Vi)/dVi)*(Vi/Li)*(Li/L_s)$$

$$= \sum Ei*(Li/L_s),$$

where Li = L(Vi). This shows total load time variability as the sum of the load time weighted averages of the route-specific load time variabilities (all Ei).

Of course, the system load time variability derivation in Proposition 2 also applies at the route level. Applying the same steps to the route level load time expression, Li = g(Vi/Si)*Si, it is obvious that Ei = Evi + (1 - Evi)*Esi, where (Evi) is the elemental load variability for route (i) and (Esi) is the stops-coverage variability for the same route. The fully dissagregated load time variability expression is then:

$$E = \sum [Evi + (1 - Evi)*Esi]*(Li/L_s).$$

$$= \sum Evi *(Li/L_s) + \sum(1 - Evi)*Esi*(Li/L_s).$$

The last expression shows system level variability as the sum of the cost-weighted averages of the route-specific elemental variabilities plus the sum of the cost-weighted averages of the route specific coverage-related variabilities. This is just as witness Lerner demonstrated in R90-1.[1] Of course there are other possible disaggregation levels but, in all of these, the Proposition 1 variability derivation still applies at the appropriately defined level.

2. Aggregation of Disaggregated Results

When using the USPS/Commission mean value approach, (a) total load time from which the variabilities are derived and (b) the system load time used to estimate volume variable load costs must have the same value. (TR16225-16228) The requirement is the same in the disaggregated variability approach. Correct system level variability estimation requires that the two load time values match at the system level.

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[1] R90-1, ADVO-T-1, Appendix B.

Because there is a difference between the LTV modeled (L_s) and STS system-wide load time (L_s'), this difference should be treated as fixed stop time and apportioned to individual routes on the basis of actual stops. Each of the route-level amounts is then be multiplied by the appropriate route-level stop variability to determine the route-level volume variable cost adjustment. In mathematical form the system level adjustment is then described by:

$$(L_s' - L_s)^*\sum [Si/\sum Si]^*(Esi) = \sum(L_s' - L_s)^*[Si/\sum Si]^*(Esi).$$

The term $(L_s' - L_s)^*[Si/\sum Si]$ apportions the excess STS load time (*i.e.*, fixed stop time) to each route based on route shares of total actual stops. The route (i) volume variable fixed stop time is then $(L_s' - L_s)^*[Si/\sum Si]^*(Esi)$, or the apportioned fixed stop time amount multiplied by the route-specific stops variability. Finally, all the terms are added to determine the system level correction.

D. Saturation Volume in the 1986 USPS System

Contrary to witness Baron's assertion, there was a considerable amount of carrier route saturation mail in the system in 1986. In fact, there may have been proportionately more such mail in the system in 1986 than in 1996:

- In 1986, carrier route mail was 54.9% of BRR volume. In 1996, it is only 49.1% of BRR/Standard A volume, a decline of 5.8 percentage points.
- In 1986, carrier route mail was 16.8% of total domestic volume. In 1996, it is only 16.1% of total domestic volume, a decline of 0.7 percentage points.
- In 1989, 43.9% of carrier route mail was saturation while in 1996, only 35.0% of carrier route mail is saturation, a decline of 8.9 percentage points.

- In 1989, saturation mail was 22.6% of total BRR while in 1996, it was only 17.2% of total Standard A Regular.[1]

Accordingly, the models adequately reflect the effect of saturation volume on load time.

[1] Sources: 1986 and 1996 Carrier Route, BRR and Total Mail data from RPW reports, adjusted for Government Mail; 1989 data from Carrier Route Special Study, LR F-199, Appendix 10; 1996 Standard A ECR saturation data from LR H-145, Section G2.

ATTACHMENT A

AUTOBIOGRAPHICAL SKETCH

My name is Antoinette Crowder and I am a senior consultant with TRANSCOMM, Inc., an engineering and economic consulting firm located in Falls Church, Virginia. I have been associated with TRANSCOMM for twenty-five years and, during that time, have been involved in a variety of projects dealing with costing, pricing, market and demand studies, economic and financial analyses, and research on numerous regulatory and policy issues. These activities have concerned the electric power, gas, communications, and postal/publishing industries. I have prepared and/or assisted in preparing numerous filings at various federal and state regulatory agencies on behalf of numerous clients. In addition, I am involved in the firm's international consulting activities, providing financial, economic and regulatory assistance to multi-national organizations, international firms, and national governments.

I have been involved in analyses of postal ratemaking and policy issues since the beginning of the R77-1 rate case. My work has involved revenue requirement, cost attribution and distribution, subclass rate structure and discounts, institutional cost allocations, service-quality measurement, demand and market assessment, and mail classification issues. I am part of the TRANSCOMM team that provides economic/financial advice on postal matters and monitors costs, financial statements, volumes, service levels, and other aspects of Postal Service operations on behalf of several clients.

I have testified before the Postal Rate Commission in six proceedings and have contributed to development of other testimony presented to the Commission. In Docket R84-1, I contributed to peak-load and second-class intra-SCF discount testimony. In Docket R87-1, I contributed to carrier-out-of-office and third-class/fourth-class Bound Printed Matter drop-ship discount testimony, and I also prepared and presented

rebuttal testimony on third-class presort discounts. In Dockets C89-3/MC89-1, I helped prepare and presented direct testimony on the proposed local saturation subclass. In Docket R90-1, I assisted in preparation of carrier-out-of-office cost and institutional cost coverage testimony and prepared and presented rebuttal testimony on third-class rates. In the R90-1 Remand, on behalf of a third-class mailer's group, I presented testimony concerning the attribution of city carrier coverage-related costs. I also presented two pieces of rebuttal testimony in Docket R94-1 and a rebuttal testimony in MC95-1.

Over the course of my 20-year involvement in postal ratemaking matters, I have had numerous opportunities to observe postal operations and have analyzed the cost aspects of those operations. I have also become familiar with economic costing and pricing concepts, both generally and as applied to postal ratemaking.

My education includes a B.S. in Biology from the University of Virginia, an M.S. in Biology from George Mason University, and additional course work in economics, mathematics and statistics.

CERTIFICATE OF SERVICE

I hereby certify that I have on this date served the foregoing document upon all participants of record in this proceeding in accordance with section 12 of the Rules of Practice.

Thomas W. McLaughlin

March 9, 1998